In the Claims:

Please amend the claims as follows:

1. (Currently Amended) A method for forming a nanostructure, comprising self-assembling a three-dimensional multi-layer nanodot arrays of uniform size in a matrix material from a nanodot material based upon a difference in Gibb's free energy of oxidation of the nanodot material and the matrix material.

2. (Original) The method of claim 1, wherein the difference in Gibb's free energy of oxidation between the nanodot material and the matrix material is at least 100 kcal per mole.

3. (Original) The method of claim 1, wherein the difference in Gibb's free energy of oxidation between the nanodot material and the matrix material is between about 100 kcal per mole and about 200 kcal per mole.

4. (Original) The method of claim 1, wherein the difference in Gibb's free energy of oxidation between the nanodot material and the matrix material is about 150 kcal per mole.

5. (Original) The method of claim 1, further comprising oxidizing the matrix material substantially simultaneously with the self-assembly of the nanodot array.

6. (Original) The method of claim 1, wherein self-assembling a nanodot array in a matrix material is performed repetitively to form a plurality of self-assembled nanodot arrays stacked on one another.

7. (Original) The method of claim 6, wherein at least three nanodot arrays are self-assembled on one another.

8. – 28. (Cancelled.)

29. (Currently Amended) A method for promoting the self-assembly of nanodots, comprising:

providing a deposition apparatus having a deposition chamber;

providing a target comprising a nanodot material and a target comprising a matrix material within the deposition chamber;

providing a substrate within the deposition chamber;

forming a plasma of nanodot material in the deposition chamber by evaporating at least a portion of the target comprising a nanodot material, wherein the plasma forms at least one nanodot material containing monolayer on the substrate while forming a plasma of matrix material in the deposition chamber by evaporating at least a portion of the target comprising a matrix material, wherein the plasma forms a layer of matrix material on the substrate and any nanodots assembled thereon; and

allowing the at least one nanodot material containing monolayer on the substrate to self-assemble into nanodots of the nanodot material.

30. (Original) The method of claim 29, wherein said nanodot material comprises a nanodot material selected from the group consisting of nickel, nickel alloys, platinum, platinum alloys, aluminum, aluminum alloys, magnesium, magnesium alloys, iron, and iron alloys.

31. (Cancelled.)

32. (Currently Amended) The method of claim [[31]]29, wherein forming a plasma of nanodot material and forming a plasma of matrix material are performed sequentially to form a plurality of alternating nanodot structures and matrix material layers wherein at least a portion of the matrix material layers are dispersed on the nanodots.

33. (Currently Amended) The method of claim [[31]]29, wherein the matrix

material comprises a matrix material selected from the group consisting of aluminum, aluminum alloys, aluminum oxide, nickel, nickel alloys, nickel oxide, magnesium, and magnesium oxide.

34. (Currently Amended) The method of claim [[31]]29, wherein the Gibb's free energy of oxidation of the matrix material is lower than the Gibb's free energy of oxidation of the nanodot material.

35. (Currently Amended) The method of claim [[31]]29, wherein a difference between the Gibb's free energy of oxidation of the matrix material and the nanodot material is about 100 kcal per mole.

36. (Currently Amended) The method of claim [[31]]29, wherein a difference between the Gibb's free energy of oxidation of the matrix material and the nanodot material is about 150 kcal per mole.

37. (Currently Amended) The method of claim [[31]]29, wherein a difference between the Gibb's free energy of oxidation of the matrix material and the nanodot material is between about 100 kcal per mole and about 200 kcal per mole.

38. (Original) A method for forming nanodots on a substrate, comprising:

providing a deposition apparatus having a deposition chamber;

providing at least one substrate within the deposition chamber;

providing at least one target material within the deposition chamber;

ablating the at least one target material, wherein the ablation forms a plasma;

forming a layer of target material on the substrate; and

reacting oxygen with the layer of target material on the at least one substrate, wherein at least a portion of the oxygen reacts with a first portion of the target material to form a matrix material and a second portion of the target material self-assembles into nanodots.

39. (Original) The method of claim 38, wherein the at least one target material comprises a nanodot material and a matrix material.

40. (Original) The method of claim 39, wherein the nanodot material comprises a nanodot material selected from the group consisting of nickel, nickel alloys, platinum, platinum alloys, aluminum, aluminum alloys, magnesium, magnesium alloys, iron, and iron alloys.

41. (Original) The method of claim 39, wherein the matrix material comprises a matrix material selected from the group consisting of aluminum, aluminum alloys, aluminum oxide, nickel, nickel alloys, nickel oxide, magnesium, and magnesium oxide.

42. (Original) The method of claim 38, wherein the Gibb's free energy of oxidation of the first portion of the layer of target material is lower than the Gibb's free energy of oxidation of the second portion of the layer of target material.

43. (Original) The method of claim 38, wherein a difference between the Gibb's free energy of oxidation of the first portion of the layer of target material and the second portion of the layer of target material is about 100 kcal per mole.

44. (Original) The method of claim 38, wherein a difference between the Gibb's free energy of oxidation of the first portion of the layer of target material and the second portion of the layer of target material is about 150 kcal per mole.

45. (Original) The method of claim 38, wherein a difference between the Gibb's free energy of oxidation of the first portion of the layer of target material and the second portion of the layer of target material is between about 100 kcal per mole and about 200 kcal per mole.

46. – 64. (Cancelled.)